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In reply, please refer to:
EMD / CWB

05026PRM.11a
DATE: May 24, 2011
NPDES PERMIT NO.: HI S000002

FACT SHEET: **REAPPLICATION FOR A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE MUNICIPAL STORM WATER RUNOFF AND CERTAIN NON-STORM WATER DISCHARGES TO STATE WATERS; REVISED TO INCLUDE MUNICIPAL STORM WATER RUNOFF FROM SMALL SEPARATE STORM SEWER SYSTEMS AND STORM WATER RUNOFF FROM MUNICIPAL INDUSTRIAL FACILITIES**

FACILITY: **MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)**
SMALL MS4s AND MUNICIPAL INDUSTRIAL FACILITIES
CITY AND COUNTY OF HONOLULU (City)
TMK: All of Tax District No. 1
Island of Oahu, Hawaii

PERMITTEE: **CITY AND COUNTY OF HONOLULU**
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PERMIT STATUS

On September 8, 2009, the NPDES Permit No. HI S000002 expired, however was Administratively Extended on September 4, 2009. The City is currently working under this administrative extension of their permit, dated February 28, 2006. On November 3, 2008, the Department of Health (DOH) received the "Fiscal Year 2008 Annual Report and Permit Reapplication for the City & County of Honolulu Municipal Separate Storm Sewer System NPDES Permit No. HI S000002.

The Director of Health (Director) has reviewed this permit application and applicable laws and regulations and proposes to issue an NPDES permit to the applicant valid until midnight on September 8, 2014. This proposed permit contains those terms and conditions which the Director has determined are necessary to carry out the provisions of the Federal Clean Water Act, as amended, (33 U.S.C.1251 et seq.; the "Act"); and Hawaii Revised Statutes, Chapter 342D.

APPLICANT DESCRIPTION

The current permit was issued to the City ENV, DFM, DPP, and DDC to administer the NPDES permit for the MS4. In the proposed permit only the City ENV is the permittee as they are the primary contact in the Storm Water Quality Branch of the ENV's Division of Environmental Quality.

"The Director of the ENV is the permittee. DPP, DFM, DDC, DTS, DPR, DES, HFD, and HPD agree that the Director of ENV, through the Managing Director's Office, may reallocate resources of their respective departments as required to meet the NPDES Permit requirements, including but not limited to funding, personnel, equipment, and supplies. ENV agrees that, to the extent possible, required resources will be identified early, during the planning and budgeting process for operating and CIP funding, and that this authority does not include transferring resources to other departments" (Memorandum of Agreement [MOA], Section II, page 1). The MOA, approved on October 9, 2007, and included in the reapplication provides a more comprehensive listing of each City Department's responsibilities.

FACILITY DESCRIPTION

The MS4 is a system of conveyances, including storm drains, catch basins, curbs, gutters, canals, and ditches, designed to collect and convey storm water runoff. The area of permit coverage is the Island of Oahu.

In an effort to consolidate and streamline the permitting of the various municipal facilities, the proposed permit includes City Municipal Industrial and Small MS4 facilities to be covered under this permit. The DOH confirmed in a letter, dated July 3, 2008, that said additional facilities would be accepted when the renewal MS4 permit is issued. However, since the July 3, 2008

letter, this list was amended to omit certain facilities (i.e., H-Power and Waimanalo Sanitary Landfill), which have their own separate NPDES permits, obtained under City contract with the facility operator; and other facilities have been either added or deleted based on further site investigations.

City Municipal Industrial facilities are defined in accordance with Title 40 of the Code of Federal Regulations (40 CFR) §122.26(b)(14) and are listed in Table 1 of the permit. City Small MS4s are defined as those City facilities with two (2) or more buildings and a drainage system and are listed in Table 2 of the permit. Wastewater Pump Stations were not included in this permit as they did not meet the criteria of a Small MS4. The Paalaa Kai Wastewater Treatment Plant did not meet the criteria as a Municipal Industrial facility, however, was determined to be a Small MS4 and is listed in Table 2.

RECEIVING WATER CLASSIFICATION

The receiving waters, include all classes of inland and marine State Waters on and around the Island of Oahu. Hawaii Administrative Rules (HAR), Section 11-54-3(a), requires existing storm water runoff into inland and marine waters to meet the basic water quality criteria specified in HAR, Section 11-54-4(a).

The majority of storm drainage outfalls discharge into receiving waters which are classified by the DOH as "Class A, Marine Waters" under the HAR, Section 11-54-6. The receiving water uses stated in HAR, Section 11-54-3(c)(2), are as follows: "It is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be protected. Any other use shall be permitted as long as it is compatible with the protection and propagation of fish, shellfish and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class."

A small number of outfalls discharge into receiving waters classified as "Class AA, Marine Waters" (e.g., Kaneohe Bay) and "Class 1 and 2, Inland Waters." While the uses of Class AA and Class 1 are essentially identical to those described for Class A and Class 2, respectively, they have the additional objective that they shall retain their natural and pristine state as nearly as possible, with an absolute minimum of pollution or alteration from any human-caused source of pollution. The objective of Class 2 waters is to protect their use for recreational purposes, support and propagation of aquatic life, agricultural and industrial water supplies, shipping, and navigation. The uses to be protected in this class of waters are all uses compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters. These waters shall not act as receiving waters for any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class.

OCEAN DISCHARGE CRITERIA

The Director has considered the Ocean Discharge Criteria established pursuant to Section 403(c) of the Act for the discharge of pollutants into the territorial sea, the waters of the contiguous zone, or the oceans. The Environmental Protection Agency (EPA) has promulgated regulations for Ocean Discharge Criteria in 40 CFR Part 125, Subpart M. Therefore, the Director has determined that the discharge will not cause unreasonable degradation to the marine environment. Based on current information, the Director proposes to issue a permit.

DISCHARGE DESCRIPTION

The discharge consists of storm water runoff and certain non-storm water discharges which are collected by the MS4 and discharged into State Waters or into adjacent separately-owned storm drainage systems. The discharge of storm water runoff also includes runoff from City Municipal Industrial and Small MS4s. The major pollutants of concern continue to be silt, nutrients, litter and debris, heavy metals, and petroleum hydrocarbons. The volume of discharge is dependent upon rainfall-induced runoff and is highly variable.

The discharge of pollutants from the Permittee's MS4 and Small MS4 facilities shall be reduced to the Maximum Extent Practicable (MEP).

The discharge of pollutants from the Permittee's Municipal Industrial facilities shall be reduced to the appropriate discharge limitations subject to the Best Available Technology (BAT)/ Best Conventional Pollutant Control Technology (BCT) discharge requirement, consistent with the CWA and other respective federal and state requirements for such facilities.

DESCRIPTION OF THE EXISTING DISCHARGE QUALITY

Based on the Fiscal Year 2009 Annual Monitoring Report, covering the period July 1, 2008 to June 30, 2009 the City's monitoring included the following:

- Continued monthly stream sampling in Manoa, Waihi and Waiakeakua Streams;
- Continued suspended sediment sampling in Manoa, Waihi and Waiakeakua Streams;
- Preliminary Biological assessment study of Kuliouou Stream as part of the Maunalua Bay Reconnaissance Survey;
- Continued Best Management Practices (BMPs) survey of transportation and refuse collections providers servicing the Waikiki Business District; and
- Other Monitoring Related Activities

The following is a summary of the Water Quality Data referenced from the FY 09 Annual Monitoring Report.

2.1.3 Summary of Water Quality Data

As stated in the previous section, most of the rainfall occurred during the wet season (November through April). As a result, a majority of the samples ENV took throughout the remainder of FY09 were either during dry weather or low flow wet weather conditions (pre- or post-storm events). Because of this, most of the sample laboratory results fell within a narrow range as shown in Table 11, "*FY09 Monthly Grab Sampling Data Summary*."

On December 11, 2008, water quality data reported significantly higher concentration levels of Nitrate-Nitrite Nitrogen at all three monitoring sites during peak storm conditions. Nitrate-Nitrite Nitrogen results were reported on that sample event at concentrations of 1.74 mg/l, 0.700 mg/l, and 1.88 mg/l in the Manoa, Waihi, and Waiakeakua Stream, respectively. The geometric mean concentrations of reportable values of Nitrate-Nitrite Nitrogen in the three streams were 0.646 mg/l, 0.617 mg/l, and 1.167 mg/l, respectively which includes only 3 samples of 12 samples taken throughout the year with concentrations above the reportable value (the remaining 9 samples taken had concentrations below the analytical laboratory reportable value of 0.050 mg/l). The peak results correlate directly with increased rainfall during this sample period.

Besides the unusually high readings of Nitrate-Nitrite Nitrogen, the nutrient and solids measuring water quality were elevated during this peak storm event. Additional observations during this storm event that were noted confirmed previous findings that during wet weather conditions, TSS, Turbidity and SS readings were higher at the lower station in Manoa versus the upper stations of Waiakeakua and Waihi Stream, which leads one to believe that as the flow of water progressed down through the watershed during storm events, increased sediment loads were measured accordingly. This would support the theory by Thomas Schueler and data reported in the Washington D.C. NURP study *(Thomas R. Schueler, "Controlling Urban Runoff", July 1987)*, which indicated that bank and channel erosion, rather than erosion of pervious areas within the watershed lead to higher storm sediment levels. Under this theory, it is also noted that as watershed size becomes larger, the length of the stream channel network and the susceptibility to channel erosion increases markedly.

Other observations noted from the water quality data, showed that pH, TSS, and conductivity were measured below State water quality standards for both mean dry and wet weather conditions; while, results for turbidity, nitrogen, and phosphorous exceeded water quality standards during two wet season storm events (11/1808 and 12/11/08) and one dry weather event (9/11/08). Results are summarized in the following table and figure shown below (Table 11 - *FY09 Monthly Grab Sampling Data Summary* and Figure 6 - *Comparison Graphs of Manoa, Waihi, and Waiakeakua Streams FY09*).

ENV initiated using field water quality multi-parameter instruments (which includes turbidity, total dissolved solids, temperature, pH, conductivity, and dissolved oxygen) that produce real-time readings to potentially field personnel when identifying potential pollutant sources as part of the City's TMDL monitoring and IDDE programs. The use

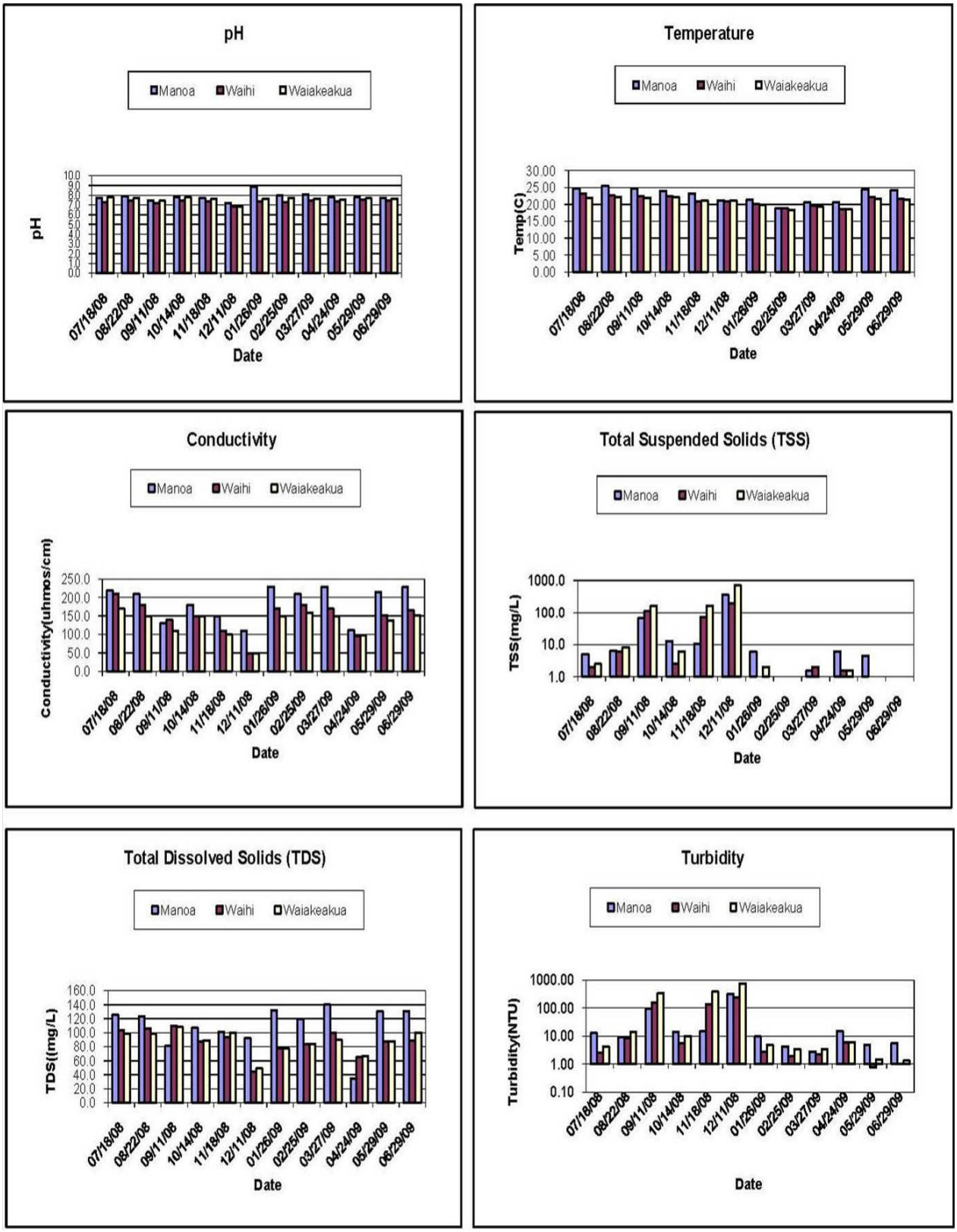
of field instruments will supplement the on-going autosampler collected/laboratory analyzed methods for solids and other water quality parameters. With use of field analysis protocols, ENV personnel would be allowed to follow up on suspected discharges on the day of the sample event as opposed to waiting for up to a month for laboratory analysis to be completed.

Table 11: FY09 Monthly Grab Sampling Data Summary

		Inst. Flow (cfs)	pH	TDS (mg/L)	TSS (mg/L)	Turb (NTU)	Cond. (uhmos/cm)	O & G (mg/L)	TKN (mg/L)	NO_2+NO_3 (mg/L)	TN (mg/L)	TP (mg/L)	Temp (°C)
Manoa Stream (FY09)													
Geometric Mean	Overall	5.20	7.84	104	8.82	13.26	179	N/A	0.324	0.646	2.032	0.095	22.6
	Wet Season	10.84	7.93	95	7.65	14.20	165	N/A	0.498	0.734	2.032	0.097	20.8
	Dry Season	2.50	7.76	114	10	12.39	194	N/A	0.19	0.50	N/A	0.09	24.5
# of Reportable Samples		12	12	12	10	12	12	0	11	3	2	11	12
Range		1.82 - 843	7.20 - 8.87	35.0 - 140.0	1.00 - 354	2.77 - 318	110 - 230	<5.00	0.100 - 6.80	.050 - 1.74	0.160 - 3.97	0.020 - 0.680	18.7 - 25.3
Avg. Load (lbs/day)		N/A	N/A	36,729	134406	N/A	N/A	N/A	851	662	1,514	259	N/A
Total Load (lbs)				440,747	1,612,875	N/A		N/A	10,209	7,942	18,172	3,112	
State WQS	Wet Season	N/A	5.5-8.0	N/A	20.00	5.00	300	N/A	N/A	0.070	0.250	0.050	N/A
	Dry Season				10.00	2.00				0.030	0.180	0.030	
Waihi Stream (FY09)													
Geometric Mean	Overall	1.37	7.35	85.1	8.02	7.52	140	N/A	0.258	0.617	1.937	0.070	21.0
	Wet Season	3.12	7.29	74.7	8.40	11.45	118	N/A	0.433	0.592	1.937	0.087	19.7
	Dry Season	0.60	7.41	44.8	7.56	4.94	165	N/A	0.187	0.670	N/A	0.056	22.3
# of Reportable Samples		12	12	12	9	12	12	0	11	3	2	10	12
Range		0.34 - 129.10	6.83 - 7.58	44.0 - 110.0	1.00 - 196.00	0.74 - 235	50 - 210	<5.00	0.100 - 1.34	0.050 - 0.700	0.160 - 2.040	0.020 - 0.380	18.6 - 23.1
Avg. Load (lbs/day)		N/A	N/A	3,060	11,553	N/A	N/A	N/A	81	42	123	23	N/A
Total Load (lbs)				36,719	138,636	N/A		N/A	966	503	1475	273	
State WQS	Wet Season	N/A	5.5-8.0	N/A	20.00	5.00	300	N/A	N/A	0.070	0.250	0.050	N/A
	Dry Season				10.00	2.00				0.030	0.180	0.030	
Waiakeakua Stream (FY09)													
Geometric Mean	Overall	3.30	7.59	85.6	16.87	13.37	126	N/A	0.294	1.167	3.504	0.090	20.7
	Wet Season	6.76	7.51	75.7	24.03	21.22	110	N/A	0.597	1.496	3.504	0.092	19.6
	Dry Season	1.61	7.68	96.8	11.84	8.42	144	N/A	0.145	0.710	N/A	0.088	21.8
# of Reportable Samples		12	12	12	8	12	12	0	10	3	2	11	12
Range		1.09 - 270	6.83 - 7.83	49 -108	1.00 - 686.0	1.30 - 741	50 - 170	<5.00	0.100 - 2.240	0.050 - 1.880	0.150 - 4.12	0.020 - 1.000	18.4 -22.0
Avg. Load (lbs/day)		N/A	N/A	7,047	83,871	N/A	N/A	N/A	278	232	512	124	N/A
Total Load (lbs)				84,561	1,006,448	N/A		N/A	3,337	2,788	6,143	1,483	
State WQS	Wet Season	N/A	5.5-8.0	N/A	20.00	5.00	300	N/A	N/A	0.070	0.250	0.050	N/A
	Dry Season				10.00	2.00				0.030	0.180	0.030	

Wet Season (November 1 through April 30), Dry Season (May 1 through October 31)
N/A = Not Applicable due to all values below reportable limit

Figure 6 - Comparison Graphs of Manoa, Waihi, and Waiakeakua Streams FY09



In future Annual Reports, the City shall provide the DOH with a summary of the water quality issues for watersheds to receive storm water discharge from the City's MS4. In Part F.1.a.(7) this is made an objective of the Annual Monitoring Plan and in Part G.2.b.(1) the activities/work implemented and results and conclusions are required to be provided in the Annual Monitoring Report and be used in future City MS4 Fact Sheets. The title of this Fact Sheet section will be revised to "Summary of the Water Quality Issues in the City and County of Honolulu Watersheds".

PROPOSED PERMIT DETERMINATIONS AND CONDITIONS

1. General Requirements listed in Part A. of the permit are necessary in preventing pollutants to be discharged with the storm water and certain non-storm water discharges to the receiving State waters.

2. Discharge Limitations listed in Part B. of the permit specify that the Permittee shall effectively prohibit non-storm water discharges through its MS4 into State Waters (per Section 402(p) of the Act). "Effectively prohibit" means that a non-storm water discharge shall be specifically regulated by an NPDES permit, or that the discharge is not considered a waste, or that the discharge does not contain constituents of concern which would necessitate an NPDES permit. NPDES permitted discharges and certain non-storm water discharges identified in Part B.2. of this permit may be allowed into the MS4 provided the City determines that such discharges will not contain pollutants in amounts that will result in a violation of an applicable water quality standard.

   As required by Section 402(p) of the Act and 40 CFR §122.26(d)(2)(iv), the discharge of pollutants from the MS4 and City Small MS4s must be reduced to the MEP. The activities described in the SWMP shall meet this MEP control standard.

   The discharge of pollutants from the City Municipal Industrial facilities shall be consistent with the BAT/BCT requirement of the Act.

3. Receiving Water Limitations listed in Part C. of the permit are restated from HAR, Section 11-54-4(a). In accordance with HAR, Section 11-54-3(a), existing storm water discharges into State Waters are allowed provided such discharges meet the basic water quality criteria listed in HAR, Section 11-54-4 (and Part C.1. of this permit). The discharge shall not cause or contribute to a violation of any of the applicable beneficial uses or water quality objectives contained in HAR, Chapter 11-54, titled "Water Quality Standards."

4. Storm Water Management Plan (SWMP) listed in Part D. of the permit has been organized to standardize the MS4 permits and to utilize the six (6) components of the Small MS4 permitting program (i.e., a – f).
   a. Public Education and Outreach

b. Public Involvement/Participation

c. Illicit Discharge Detection and Elimination

d. Construction Site Runoff Control

e. Post-Construction Storm Water Management in New Development and Redevelopment

f. Pollution Prevention/Good Housekeeping

Part D.1.f.(1)(vii) is a new section in the permit which requires the permittee to develop and submit to DOH a proposed trash control plan, including an implementation schedule, to ultimately reduce trash discharges from the MS4 to zero, which is required to comply with state water quality standards. Numerous waterbodies on Oahu are currently listed on the State's CWA section 303(d) as impaired due to trash, and the proposed requirement is intended to address this problem. Similar requirements have recently been adopted for trash control in the State of California, and DOH recommends that the permittee review these requirements* in developing a practicable plan and implementation schedule for Oahu.

*Additional information is available at:
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/mrp.shtml, and
http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/index.shtml

g. Industrial and Commercial Activities Discharge Management Program

h. Modifications

Control measures for storm water management may need to be modified as new information is obtained, existing practices are evaluated, and new BMPs developed. Part D.3.a. of this permit allows either the Permittee or the Director to propose changes to the SWMP. All modifications to this permit will be made pursuant to any applicable requirements in the DOH's Standard NPDES Permit Conditions.

5. The City Municipal Industrial and Small MS4 in Part E of the permit is a new section to allow coverage of City facilities into this permit and to consolidate separate City's NPDES permits into this permit. Requirements for these facilities shall comply with HAR, Chapter 11-55, Appendix B and K, respectively, except for the frequency of monitoring. The reduced monitoring frequency for each facility described in the permit was developed based on permit coverage for similar types of activities. Each type of activity would still be annually monitored with sampling for facilities with similar activities to be rotated. However, the highest priority facility for each type is required to be annually monitored. Rotating sampling, for similar activities with less priority, would preserve the intent of sampling by providing sufficient representative samples. The monitoring frequency is described in Part E.6.b.

6. Monitoring Requirements listed in Part F. of the permit.

    a. Annual Monitoring Plan is due on June 1st, one (1) month before the end of the fiscal year and includes the Municipal Industrial facilities priority based monitoring schedule.

    b. Storm Water Associated with City Municipal Industrial Activities - The City shall develop a priority based monitoring schedule for each type of Industrial facility with the highest priority ranked first and annually monitored. Other facilities within each type will be monitored on a rotation basis. However if any limitation is exceeded, the facility is required to be re-monitored the next year, in addition to the next priority facility. Monitoring of a facility shall continue annually until none of the parameter limitations have been exceeded. However, for facilities required to be re-sampled because of a previous exceedance or by request to the Director (on a case by case basis) for facilities which are required to be annually monitored (e.g., wastewater treatment plants), the Permittee may have the option of implementing/installing structural BMP(s) during that year in lieu of sampling. The BMP(s) shall be selected based on targeting the pollutant(s) which were exceeded. The total cost of the BMP implementation shall not be less than the cost of the sampling. Sampling shall continue for the year after which BMPs were installed to measure the effectiveness of the BMPs. The Permittee will not be granted consecutive year BMP implementation in lieu of sampling.

    c. Discharge Monitoring Reports (DMR) for City Municipal Industrial Facilities shall be included in the Annual Monitoring Report and submitted via NetDMR once established by the DOH.

    d. Waste Load Allocation (WLA) Implementation – The EPA has approved TMDLs for the following: Kaneohe Stream, the North and South Forks of Kaukonahua Stream, Ala Wai Canal, Kawa Stream, Waimanalo Stream and Kapaa Stream. As such the Permittee shall submit implementation and monitoring (I&M) plans for them to

ensure consistency with the assigned WLAs. For waters which have discharges from both the City and State of Hawaii, Department of Transportation, Highways Division (DOT-HWYs) MS4s (i.e., all except the North and South Forks of Kaukonahau Stream) the plans shall be developed jointly [i.e., only one (1) plan per TMDL watershed]; and the City and DOT-HWYs activities shall be implemented concurrently to maximize its effectiveness to comply with the WLAs. Although only one plan is to be submitted, the City and DOT-HWYs will still be responsible for compliance with each of their permits. Categorizing the MS4s as a load source in the TMDL, shall require the development of only one (1) I&M Plan for that TMDL, which addresses that source. Additionally, the currently issued permit requires "Working jointly" with the DOT-HWYs, which the permit only acts to clarify. For the Ala Wai Canal TMDL, the City and DOT-HWYs were assigned joint WLAs. For Waimanalo Stream no numeric WLAs were assigned. For the North and South Forks of Kaukonahua Stream, the DOT-HWYs was not a contributing source. For all other TMDLs, the City and DOT-HWYs were both contributing sources with separately assigned WLAs.

e. A compliance schedule shall be submitted to manage and effectively schedule and track City activities to comply with the WLAs. After the final compliance deadline, the City shall comply with the assigned numeric WLAs. For Waimanalo Stream, where numeric WLAs were not assigned, the City shall comply with the water quality standards.

f. Other WLAs - As additional WLAs are adopted and approved by the EPA that identify the Permittee as a source, the Permittee shall develop implementation and monitoring plans for a minimum of one (1) additional WLA per year within one (1) year of notification of the approval date.

7. Reporting Requirements listed in Part G. of the permit.

a. Annual Report

Most of the information specified in the annual report is required by 40 CFR §122.42(c). The Annual Report is due on October 31st, four (4) months after the end of the fiscal year.

b. Annual Monitoring Report

The Annual Monitoring Report is due on October 31st, four (4) months after the end of the fiscal year, and may be included in the Annual Report.

Discharge Monitoring Reports (DMRs) for Municipal Industrial Facilities shall be included in the Annual Monitoring Report. A DMR must be submitted for the facility

which is scheduled to be monitored even if sampling was not conducted. An explanation as to why sampling was not conducted shall be explained with the submittal.

c. Memorandum of Understanding (MOU) with DOH, MOU with DOT-HWYs, and Memorandum of Agreement (MOA) with other City Agencies

The City shall continue to maintain and comply with the MOUs and MOAs. Continued intergovernmental coordination between City Departments and adjacent MS4 operators is integral to the success of the Storm Water Management Plan.